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Assessment of the Entrepreneurship Ecosystem of the Greater Knoxville Metropolitan Area

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About Techstars

We believe entrepreneurs can change the world. From startup founders, to corporate employees, to visionary dreamers, entrepreneurs hold the keys to the greatest challenges of our time. They see opportunities. They take risks. And they clear the path for entire industries. At Techstars, we help grow their ideas into world-changing businesses.

For more information on this report and its findings, please contact **Ian Hathaway, Senior Director at Techstars** via email at ian.hathaway@techstars.com.

Acknowledgements

Our Partners

This project was developed through the support and assistance of three local partners in the Greater Knoxville community.

Oak Ridge National Laboratory is the largest U.S. Department of Energy science and energy laboratory, conducting basic and applied research to deliver transformative solutions to compelling problems in energy and security. The Laboratory's diverse capabilities span a broad range of scientific and engineering disciplines, enabling it to explore fundamental science challenges and to carry out the research needed to accelerate the delivery of solutions to the marketplace.

The Tennessee Valley Authority is a corporate agency of the United States that provides electricity for business customers and local power companies serving 10 million people in parts of seven southeastern states. TVA receives no taxpayer funding, deriving virtually all of its revenues from sales of electricity. In addition to operating and investing its revenues in its electric system, TVA provides flood control, navigation and land management for the Tennessee River system and assists local power companies and state and local governments with economic development and job creation.

The University of Tennessee is the state's oldest and largest public higher education institution, tracing its beginnings to the founding of Blount College in Knoxville in 1794, two years before Tennessee became a state. The UT System was formed in 1968. The UT System has a presence in each of Tennessee's 95 counties. Through the combined force of education, research and outreach, the University serves students, business and industry, schools, governments, organizations and citizens statewide.

Introduction & Summary of Findings

This is a unique moment for Knoxville's tech entrepreneurship community. The last several years have seen significant successes emerge from the sector including Arkis Biosciences, Cirrus Insight, Gridsmart, and Sword & Shield Enterprise Security. The momentum of organizations established in the last decade to facilitate the growth of local startups, such as the Knoxville Entrepreneur Center and Innovation Crossroads, is also continuing to grow, and new political leaders within the city and county have joined the heads of local institutions in calling for increased support for founders of technology companies.

Earlier this year, the leaders of Oak Ridge National Laboratory, the Tennessee Valley Authority, and the University of Tennessee asked Techstars to conduct an assessment of the "ecosystem" or overall environment for technology entrepreneurship in the East Tennessee region.[†] For the purposes of this study, "technology entrepreneurship" is defined to include companies led by local founders in the following industries: software, advanced manufacturing, energy, and biotech and life sciences (excluding direct services). Public and private data suggest that there are more than 300 local companies founded since the year 2000 operating in these sectors in the Knoxville metropolitan area.

The primary questions this study seeks to answer are:

• **What is the current status of the local tech entrepreneurship community, particularly its strengths and weaknesses?**

• **How can local leaders work to improve the environment for technology entrepreneurship in the region?**

During the course of this project, researchers working with Techstars interviewed and surveyed more than 60 local entrepreneurs and had several dozen conversations with leaders of local entrepreneurship support organizations, investment groups, educational institutions, political and civic entities, and economic development organizations. Secondary data on industry employment, local productivity, equity investing and other topics was also collected from public and private sources for analysis.

[†] For the purposes of this report the terms "East Tennessee region," "Greater Knoxville," and the "Knoxville region" are used synonymously to refer to the Knoxville Metropolitan Statistical Area, which is defined by the federal government to include the following eleven counties in Tennessee: Anderson, Blount, Campbell, Grainger, Jefferson, Knox, Loudon, Morgan, Sevier, Roane, and Union.

Analysis of the data drawn from these sources identified five areas of strength within the local tech entrepreneurship community.

Large Research Institutions. The University of Tennessee, the Tennessee Valley Authority, and Oak Ridge National Lab collectively spend billions of dollars on research and operations in technology-rich fields including energy, life sciences, composite materials, and high-performance computing.

Excellent Quality of Life. The Knoxville area is consistently ranked among the most desirable places to live in the United States. Entrepreneurs noted the local community provides easy access to nature along with the benefits of a city, without the drawbacks of larger metropolitan areas.

Relatively Low Cost of Living. Numerous indices rate Greater Knoxville as a relatively low-cost place to live, especially when compared with the value of local amenities. These lower costs can make it easier to succeed as a tech entrepreneur.

A Deep Pool of Technical Talent. The University of Tennessee is one of the largest tier-one research universities in the United States and produces thousands of science, math, and engineering graduates each year. In addition, the current workforce in the Greater Knoxville area includes large numbers of technical workers already employed at the major research institutions and other organizations.

Existing Support Organizations for Startups. A number of new organizations and programs have been created to assist entrepreneurs at early-stage companies. These initiatives provide a sense of broad support for new technology companies.

The research conducted for this project also identified several critical challenges or "gaps" that need to be addressed to accelerate the growth of local companies. These fell into six major categories.

The Perception Gap. Many leaders and entrepreneurs reported that they believed Knoxville didn't have many entrepreneurial successes in the tech sector and was therefore "not a great place for tech entrepreneurs."

The Funding Gap. The lack of early stage funding was the most commonly cited major challenge among entrepreneurs and community leaders in project interviews and surveys.

The Support Gap. Though the Knoxville community includes a number of new organizations and programs for startup-stage businesses, little support exists for growth-stage companies, defined here as businesses that have raised over $1 million in funding or have reached over 20 employees.

The Access Gap. Local research institutions and corporate firms are of very high quality but are very difficult for entrepreneurs to work with.

The Participation Gap. The proportion of women and minority founders served by programs for local technology entrepreneurs does not reflect the demographics of the broader Knoxville metropolitan area.

The Measurement Gap. Basic information on the status of local tech entrepreneurship, such as estimates on the number of local tech companies, varies significantly, which makes coordination among organizations working in this sector more challenging.

As part of this study, Techstars identified more than a dozen opportunities for addressing each of these six gaps. A short summary of the key recommendations and selected opportunities is listed below.

Change the narrative about local entrepreneurship by drawing more attention to successful tech entrepreneurs in the Knoxville region. This could include the creation of a public relations campaign to draw more attention to the current successes of local tech companies and the development of an "entrepreneurship story" highlighting how technology founders have positively influenced the region in the past.

Provide local founders with more pathways for raising early stage funding. These include increasing the number of local companies applying for federal research grants, recruiting a national accelerator or incubator program that provides connections to capital providers outside the region, and exploring the development of a new local early-stage venture capital fund.

Develop new programs to assist growth-stage companies that have grown beyond existing local initiatives for startups and idea-stage founders. Ideas in this area focused on creating a new program to match local successful entrepreneurs and executives with growth-stage companies and expanding peer networking initiatives.

Create intentional points of contact and ensure that internal incentives are aligned with supporting entrepreneurs. This could include designating "guides" within local research institutions and large corporations to help entrepreneurs navigate each institution, and recruiting more successful entrepreneurs who have worked with the institutions to serve on the boards of entrepreneur-focused programs to give founders a greater voice.

Leverage the strengths of the tech entrepreneurship community to increase its own diversity and support underrepresented founders in other local sectors. Suggestions in this area targeted increasing board and leadership participation from underrepresented groups, and bringing tech entrepreneurs together to lead initiatives for supporting the growth of existing entrepreneurs from underrepresented groups across all industries.

Design collaborative measurement tools to monitor progress and support transparency and accountability. This includes combining external information with primary data collected from local stakeholders and ensuring that the resulting analyses are shared in a timely and transparent manner.

Strengths: Knoxville's Tech Entrepreneurship Community Has Five Major Advantages.

There was remarkable consistency in the perspectives of leaders, founders, and other stakeholders in Greater Knoxville's tech entrepreneurship community. As the word cloud on the opposite page illustrates, the qualities and organizations they cited can generally be classified into five thematic areas listed below.

#1. Large Research Institutions. The University of Tennessee was the most commonly mentioned reason it was great to start a tech business in the Knoxville metro area. The Tennessee Valley Authority and Oak Ridge National Lab were also mentioned frequently as the graphic on the next page illustrates. As one founder noted "The university and Oak Ridge offer access to a lot of hardware that is not available in any other location in the country." **Other leaders cited the fact that local research institutions collectively spend billions of dollars on cutting-edge research in many different fields.**

The wide variety of the fields targeted by these organizations likely contributes to the diversity of industries represented by Knoxville's technology companies. Unlike many technology hubs, which tend to have their greatest successes concentrated in specific industries like financial technology or medical devices, Knoxville's top-performing entrepreneurial tech companies work in sectors including software-as-a-service, pharmaceuticals, cyber security, artificial intelligence, and materials manufacturing.

The benefits of these institutions extend beyond the innovations they directly produce. In many cases, they have helped to bolster the reputation of the region. "ORNL has been a benefit to recruit people because it puts Knoxville on the international map," a successful founder explained. "Whenever we are trying to recruit a scientist, they know about Knoxville because they have been involved with Oak Ridge or because someone they know has worked there in the past."

Several interviewees also noted that many of the historic successes in the local technology industry, such as Ortec and CTI, emerged from research generated at these local research and innovation centers. They have also helped to attract other assets to the region, such as the Electric Power Research Institute, which has expanded its presence in East Tennessee due to the proximity to the Tennessee Valley Authority.

Most Frequent Responses from Local Tech Entrepreneurs to the Question "What Advantages Does the Knoxville Area Offer Someone Starting Or Building A Technology Business?"

Quality of Life Research
Lakes Mountains **Technology** Lab Companies
Live Place Small **Oak Ridge** **TVA** Institutions
Enough
Help **University** **Talent**
Startup Resources
KEC **People** **Cost of Living**
Community Company
Business Costs
Support
Access Market Taxes

Note: The size of each response indicates how frequently it was mentioned by local entrepreneurs.
Source: Interviews and surveys of local technology entrepreneurs.

#2. Excellent Quality of Life. News organizations, such as U.S. News & World Report, have consistently ranked Greater Knoxville as one of the top places to live in the United States.[1] The local entrepreneurs and leaders involved with supporting technology companies would seem to agree with this assessment.

"Knoxville is a wonderful place to live. We have mountains and lakes nearby, and the weather is temperate," according to one startup founder, echoing the sentiments of many others interviewed for this project. In addition to the nearby Smoky Mountains, many respondents cited other natural amenities, such as the large number of parks in the city of Knoxville. Others discussed the ability to participate in hiking, cycling, water sports, and other outdoor activities.

A number of founders also highlighted the benefits of living somewhere with many of the benefits of a city — such as major corporations and a large university — but without the drawbacks of larger metropolitan areas, including traffic. They also spoke about the sense of community and ties to family members in the area.

These types of factors are very important for creating an environment that is conducive to the growth of entrepreneurial companies. Research conducted among leaders of the fastest growing companies in the country has found that "entrepreneurs at fast-growing firms usually decide where to live based on personal connections and quality of life factors many years before they start their firms."[2] The fact that the Knoxville region excels in these areas is likely to continue to benefit the local technology sector.

#3. Relatively Low Cost of Living. Though East Tennessee is a great place to live, local tech entrepreneurs report the benefits it provides come at a very reasonable price. "When we came here, we just planned to stick around for a few years and then leave, but my wife and I just bought a house here and plan to stay. It is so much more cost effective to build a business here than in places like Boston or New York City," a local tech founder reported.

Numerous public indices rate Knoxville as a relatively low-cost place to live, especially when compared with the value of local amenities.[3] Home prices in particular are quite low compared to those in other cities like Atlanta and Nashville.

These lower costs can make it easier to succeed as a tech entrepreneur. "The lower cost of living allows a startup company more runway with the dollars they have," one tech CEO noted. Others explained that since the cost of operating their companies in the Knoxville area is less than what it would be in cities like San Francisco, it offers an advantage when applying for national grants and competitions where the cash prizes are set at levels designed to support businesses in larger tech hubs. In Knoxville, the dollars that entrepreneurs raise or win through competitions can be stretched much further.

#4. A Deep Pool of Technical Talent. The primary resource today's technology companies need is talent. This is another area where many local founders believe the region excels. One entrepreneur spoke about the region's "good talent pool for technologists and operations specialists," while others linked the quality of potential employees to their cost. **"The tech talent here is less expensive than in other cities," a successful founder explained. "If you invest in training them they are loyal and less likely to go work somewhere else."**

Highly skilled talent is good for more than just the technology industry. A number of different research studies have found the proportion of workers with bachelor's and graduate degrees is closely related to the productivity of economic regions and the development of high-paying industries.[4]

The development of local talent is clearly linked to the local research institutions discussed earlier. The University of Tennessee is one of the largest tier-one research universities in the United States and produces thousands of science, technology, engineering, and math graduates each year.[5] In addition, the current workforce in the Greater Knoxville

area includes large numbers of technical workers already employed at the major research institutions and other organizations.

#5. Existing Support Organizations for Startups. In the last decade, a number of organizations and programs have been created to support entrepreneurs who lead companies at the "startup" stage, meaning they are in the process of developing their initial business plan and legally incorporating their business, or they are in the early years of growth with only a handful of employees. These new organizations and programs include the Knoxville Entrepreneur Center, the Anderson Center at the University of Tennessee, Innovation Crossroads at Oak Ridge, and the Propel program at the Knoxville Chamber of Commerce.

These initiatives have all been designed and launched by local stakeholders. The startup founders who have participated in them report they have been very satisfied with the quality of the support they have received to help them get their companies off the ground. "Entities like the Knoxville Entrepreneur Center are an invaluable resource for startups in Knoxville," one early-stage entrepreneur reported. "I've appreciated how they've tried to bring together local entrepreneurs to learn from one another and help with networking and funding opportunities."

Together, these initiatives have helped to establish a sense of broad-based support for new companies. As one founder noted, "The Knoxville startup community is small but very tight-knit and supportive. You can very quickly meet everyone in the community and build a network to help your company."

The advantages represented in the five areas listed above provide the Knoxville region's technology companies with a strong foundation that is based primarily on factors that are unlikely to change, such as the weather and topography, and the presence of federally funded institutions. Each is likely to continue to help shape the local tech entrepreneurship community in ways that make it distinct from those found in other cities.

Gaps: There Are Six Areas for Improvement in the Local Tech Entrepreneurship Community.

Alongside the significant strengths found in the region, analysis of the tech entrepreneurship community in Greater Knoxville also identified a number of critical challenges or "gaps" that need to be addressed to accelerate the growth of local companies. The identification of these gaps is based on data collected through surveys and interviews of local tech founders and leaders, as well as macro-level data on the region's performance compared to its peers. These analyses were later confirmed in small-group discussions and additional interviews with key leaders in the community over a six-week period. The major gaps of Knoxville's tech entrepreneurship community fell into six major categories, which are listed below.

#1. The Perception Gap. Few people in East Tennessee realize how well locally-based technology companies are performing. In fact, many leaders and entrepreneurs interviewed for this project reported that they believed that Knoxville didn't have many successes to point to despite the fact that the community has experienced a number of large acquisitions in recent years, such as Arkis Biosciences, Cirrus Insight, Gridsmart, and Sword & Shield Enterprise Security. As one founder noted, "There is a sense that Knoxville is not a great place for tech entrepreneurs."

Why is this the case? The misperception of local success seems to be due to a lack of storytelling. A number of top-performing tech founders referred to their businesses as "one of Knoxville's best kept secrets," and the data suggests they are right. **The typical entrepreneur interviewed or surveyed for this project could only name two or three local tech companies less than 20 years old that have had significant success, though several dozen exist.**[†]

Studies indicate that seeing examples of top-performing local founders helps to support future growth. Among local founders, "there is often a sense of 'If he [or she] can do it, so can I,'" researchers have reported. In addition, positive examples can raise the expectations of other entrepreneurs and help to legitimize starting a company as an attractive career path.[6]

Addressing this gap is also important because the negative perception of the local tech community is not supported by data. Analysis comparing the growth of tech-based companies across cities indicates that, relative to its population size, the Knoxville metropolitan area is near the national average in terms of producing local technology companies that grow to significant size. Knoxville's comparative performance is likely even stronger than this calculation suggests — the metropolitan area's private sector is actually smaller than that of other cities of similar population because so many local workers are employed by the state and federal government at the University of Tennessee, Oak Ridge National Laboratory, the Tennessee Valley Authority, and the Y-12 National Security Complex.

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† "Significant success" was defined as meeting at least one of three criteria: 1) raising more than $1 million in external funding via grants or equity investment; 2) reaching 50 employees or more in size; or 3) experiencing an acquisition that yielded positive returns for the entrepreneurs and their investors.

Number of Early-Stage Investments made in Knoxville and Similar Metropolitan Areas: Total Series A & B Deals per 100,000 residents from 2017 to 2019
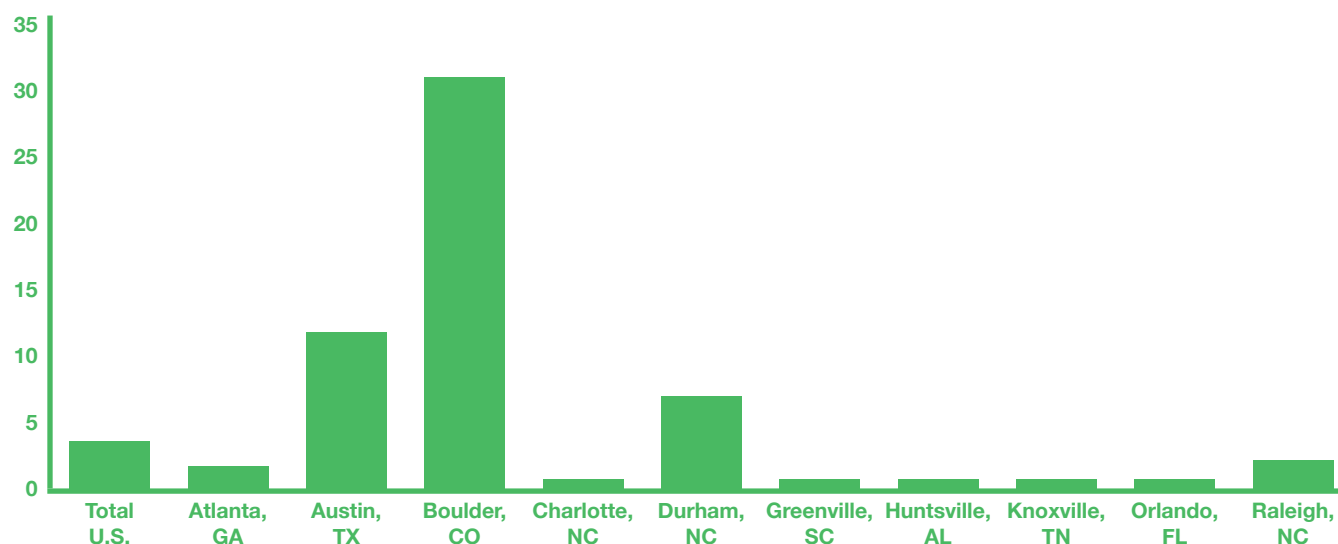
Note: Population estimates are for the year 2018. Investment deals is the sum of the years 2017 to 2019. A combination of series A and B investing was used for comparison due to data availability. Benchmark communities are based on the selection of local project partners. **Source:** Pitchbook, 2020. American Community Survey, U.S. Census Bureau, 2019.

#2. The Funding Gap. The lack of early stage funding was the most commonly cited major challenge among entrepreneurs and community leaders in project interviews and surveys. More than half of the community leaders interviewed for this project cited the lack of early-stage capital as a major challenge to the growth of local entrepreneurial tech companies, while over 80 percent of the founders of early-stage startups agreed with the statement that "access to equity funding is a major challenge for tech entrepreneurs in Knoxville."

National data on venture capital fundraising confirms this assessment. During the last three years, the Knoxville metropolitan area had a smaller proportion of early stage equity investments — often referred to "series A" or "series B" venture capital investments — than the average for the entire United States relative to its population size. When compared to cities identified as benchmark metropolitan areas by local leaders, Greater Knoxville's performance is among the lowest cities over the past three years.

Because the funding in the community is at such low levels, available investment capital can sometimes be a poor match for the needs of young, high-technology businesses. "The investor community is not very experienced," a founder who had to go outside the region to raise equity investment explained. "Most of the Tennessee-based funds are also conservative in their investment approach, which doesn't necessarily align with the needs of deep-tech startups coming out of UT or ORNL that require long R&D times and capital investment."

The need to create more local investment funds for tech companies is great enough that several attempts have been made to create one in the past ten years. Unfortunately, none of these efforts have yet succeeded. However, it is likely the financing needs of early stage tech companies will require multiple sources of additional funding to meet the varied needs of the different industries and business models found in the Knoxville region.

#3. The Support Gap. As noted earlier, the Knoxville community includes a number of organizations and programs for startup stage companies. However, those that move beyond the first stages of development and begin to grow lack support. "We are much improved as a community in supporting very early stage entrepreneurs, but as businesses start to mature there are different challenges and struggles and there is nothing here to help us scale," one founder reported based on her own personal experience. "We don't see those who have gained experience sharing their knowledge with those coming behind them."

Other local founders shared similar experiences. "Once you pass the startup phase, there are no middle range support or mentorship programs. What do you do when you have growth and you need to innovate? Who can talk to you about how to go to scale from 10 contracts to 100 contracts to 1,000 contracts? I've had 300 percent growth per year for the last three years and I have no idea who I can talk to for help."

The gap in support for growth-stage companies — defined here as businesses that have raised over $1 million in funding or have reached over 20 employees — is especially glaring when it comes to mentorship. The majority of local founders at growth-stage companies interviewed for this project reported that they did not have any local mentors. These entrepreneurs also reported that it was difficult to get assistance accessing expertise and client introductions from the local community. The lack of support for these tech businesses is critical since national data shows that growth-stage companies are responsible for a greater share of local economic growth than startups, and connections to successful mentors and experts can significantly improve the likelihood that a company becomes a high-performer.

Many successful mentors and executives who could provide valuable support to growth-stage entrepreneurs also recognize this gap. "The connections between entrepreneurs who are trying to scale and potential mentors like me aren't happening organically," one of the most successful tech founders in Knoxville noted. "I'd like to help other businesses, but they need to be people who can benefit from my experience. I wouldn't be that useful to someone starting a taco truck."

#4. The Access Gap. Local research institutions and corporate firms are of very high quality but are very difficult for entrepreneurs to work with. Large organizations are complex. Different departments are often siloed off from one another, making it challenging even for people inside the organization to navigate, let alone outsiders. Unfortunately, this means local tech entrepreneurs cannot easily access the large research institutions and local corporations that have the potential to be great accelerators for their success.

As one entrepreneur said, "We have not had success getting to the right people at the university. We have recruited from Ivy League schools and they help us find great talent. I can't get the same support from UT." Similar feedback was offered from those hoping to work with researchers at the school and Oak Ridge National Laboratory.

Founders hoping to engage with local corporations also faced challenges. "One of the biggest negatives I see is that there are no programs for large businesses to use entrepreneurial firms as suppliers," one explained.

Overall, most of the entrepreneurs who had attempted to work with local research organizations or corporations rated them as difficult or very difficult to engage with.

Entrepreneurship Participation in the Knoxville Metropolitan Region: Proportion of Businesses Owned vs. Proportion of Adult Population

	By Race & Ethnicity				By Gender	
	Asian	**Black**	**Hispanic** (Non-White)	**White** (Non-Hispanic)	**Men**	**Women**
Proportion of Adult Population	1%	6%	2%	92%	48%	52%
Proportion of Businesses Owned	6%	1%	1%	91%	81%*	34%*

* Totals for men- and women-owned businesses sum to more than 100 percent due to the fact that the Census Bureau allows for businesses to be categorized as co-owned by men and women. Similar co-ownership categorization is not available by race and ethnicity. Due to rounding, some of the other categories do not sum to exactly 100 percent.
Source: Annual Business Survey, U.S. Census Bureau, 2018. American Community Survey, U.S. Census Bureau, 2018.

#5. The Participation Gap. The proportion of women and minority founders participating in programs for local technology entrepreneurs is not reflective of the demographics of the broader Knoxville metropolitan area. "The gender gap in the tech industry is a problem across the U.S., but more so in Knoxville," according to one local entrepreneur. Another noted, "When I show up at events, I'm often the only person of color in the room."

Under-representation within the technology sector is an issue in many communities. Leaders of local support organizations acknowledged the importance of this issue for tthe region in interviews conducted for this project, and several noted steps already underway to address it.

The lack of diversity among technology entrepreneurs in the Greater Knoxville region is likely related to larger dynamics among all business owners. For example, only about 2 percent of all local businesses with employees are owned by Black and Hispanic founders, and only 34 percent are owned by women entrepreneurs. National data has also found that the Knoxville region is below average in generating women-led high-tech startup companies as well.[7] Since technology-based companies make up only a small proportion of all entrepreneurial companies, increasing representation among technology founders will likely need to be part of larger efforts within the entire entrepreneurship community.

#6. The Measurement Gap. Interviews with local leaders indicated that basic information on the status of local tech entrepreneurship, such as estimates on the number of local tech companies, varies significantly. Conversations also revealed the information that does exist inside of individual organizations is not regularly shared or updated externally.

The lack of shared data makes coordination among organizations working in this sector more challenging. As one leader noted, "How can we all work together if we don't have a shared idea of what is going on?" It also can lead to misinformation — fueling other challenges, such as the perception gap addressed earlier.

Looking forward, it will be difficult to identify progress and manage coordination across local organizations engaged with tech entrepreneurs without effective and transparent data on the status of the community. The lack of measurement will also complicate efforts to make adjustments to community strategies as new challenges and opportunities arise.

Recommendations & Conclusion

As the previous section noted, national data suggests that Greater Knoxville's tech entrepreneurship community is performing near the national average given its size. However, given the recent successes the community has experienced and the fact that it possesses a number of distinct strengths, including its research institutions and local quality of life, it is reasonable to believe the Knoxville metropolitan area has the potential to be much better than average when it comes to technology entrepreneurship.

The tables on the next two pages highlight more than a dozen ideas to address the gaps identified in the previous analysis. These ideas are drawn from interviews with leaders and founders in the Greater Knoxville area as well as research conducted in other communities. Due to the interrelated nature of these opportunities, they are likely to be even more effective when implemented in a coordinated fashion. Most will require multiple local partners to work together for effective implementation.

This is an exciting time for Knoxville's tech entrepreneurship community. The opportunities identified through this project can help to build on the region's strengths and the current momentum in the sector. As one successful founder explained, "Things are moving into alignment. The picture isn't always perfect, but viewed as more of a movie you can really see things coming together."

Project Recommendations

#1. Change the narrative about local entrepreneurship by drawing more attention to successful tech entrepreneurs in the Knoxville region.

- Develop a public relations campaign to place more stories on growing and successful companies in the local media and on existing entrepreneurship platforms. This campaign could be united around a common theme — such as "Knoxville: Great Companies Grow Here," as one founder suggested — or be incorporated into existing media campaigns promoting businesses in the region.
- Create an "entrepreneurship story" for the community highlighting how technology founders have helped build the city in the past through supporting one another and are currently having further success. This could be shared in book format distributed to local university students and via presentations to the community.
- Encourage and support the independent media, such as blogs or podcasts, that promote and support the success of local entrepreneurs.

#2. Provide local founders with more pathways for raising early stage funding.

- Increase the number of local companies receiving support to apply for SBIR and STTR grants. The East Tennessee region already leads the state in winning SBIR awards and has the potential to be a national leader in earning these types of funding. Research also indicates the program is associated with impressive outcomes for companies that participate.[8]
- Recruit a national accelerator or incubator program that supports companies preparing to fundraise and also provides connections to capital providers outside the region. As one successful entrepreneur explained, "We need to figure out how to build a network of early stage investors that look regularly at the region." Research has also found social connections between investors and local residents are associated with increased investment in those regions, emphasizing the importance of building relationships with capital providers in other regions.[9]
- Develop a new early-stage investment fund or matching mechanism for seed and series A investments in local companies. Knoxville lags behind peer cities in Tennessee when it comes to the supply of equity capital for technology companies. Nashville, Memphis, and Chattanooga all have locally operated venture capital funds with tens of millions in funding.
- Train local high-net-worth individuals and family offices on how to become involved in early-stage investing by "angel investing" or becoming limited partners who provide capital to venture funds. Investing in these ways can provide financial returns and also help to support the development of the local economy.
- Increase participation in programs that demonstrate success in bringing in outside funding, such as Innovation Crossroads.

#3. Develop new programs to assist growth-stage companies that have grown beyond existing initiatives for startups and idea-stage founders.

- Create a new program to match successful entrepreneurs and executives with growth-stage companies to provide tailored support and expertise. Knoxville is fortunate to have a large number of successful technology entrepreneurs and senior executives. A number have expressed interest in acting as mentors for growing companies during interviews for this project.
- Expand peer networking. Initiatives such as the GrowthCo meetup at the Knoxville Entrepreneur Center should be expanded since most growth stage entrepreneurs reported knowing very few peers. These initiatives may need to take on a different format given the challenges of the current pandemic, but a number of founders who had participated noted they found them valuable and look forward to them resuming.
- Help provide improved access to available laboratory space in the community, or increase the overall supply, for growing companies that need specific types of laboratory space. The Spark Innovation Center at the University of Tennessee Research Park is an important step in this direction, though additional space will likely be needed.

#4. Create intentional points of contact and ensure internal incentives align with supporting entrepreneurs.

- Designate "guides" or "navigators" within local research institutions and large corporations to help entrepreneurs navigate each institution. The names and contact information of these individuals should be centralized in a single location and provided to local entrepreneurship support organizations and other community members.
- Recruit more successful entrepreneurs who have worked with the institutions to serve on the boards of entrepreneur-focused programs to give founders a greater voice. As an experienced local founder explained, "Well-intentioned people that don't actually know about entrepreneurship are leading things at our big organizations." Providing entrepreneurs with more of an opportunity to give input will enable programs to be better designed for their needs.

#5. Leverage the strengths of the tech entrepreneurship community to increase its own diversity and support underrepresented founders in other local sectors.

- Increase board and leadership participation from underrepresented groups and seek input on improving outreach and support within local entrepreneurship organizations. Studies have shown that people are more likely to have social connections and relationships with others who share similar demographic characteristics. Increased leadership from members of underrepresented groups can help broaden the reach of existing programs and events.
- Bring tech entrepreneurs together to lead initiatives for supporting the growth of existing entrepreneurs from underrepresented groups across all industries. Since the lack of representation is a systemic issue for the entire entrepreneurship community, the solutions that are needed should be targeted toward the entire entrepreneurship sector. Tech founders can and should play a leading role in initiatives designed to address these issues.

#6. Design collaborative measurement tools to monitor progress and support transparency and accountability.

- Combine multiple external data sources outside the region to benchmark progress on fundraising, company growth, and related metrics. These analyses can help provide a perspective on the "big picture" in terms of progress made in the community overall and compared to regional peers.
- Utilize primary data collection to identify companies that are making significant progress or that could benefit more than others from targeted support. A shared list of high-potential companies will help leaders coordinate support and ensure resources are allocated efficiently to help entrepreneurs grow their companies.
- Share the results of data collection with leaders on a regular basis to facilitate coordination and dialog in the community. Reports sharing measurements of local progress should be released multiple times each year to highlight progress and ensure leaders are all operating with the same set of facts.

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